REMARKS

In the Final Office Action mailed August 21, 2007, the Examiner took the following action: (1) rejected claims 1, 2, 4-6, 10-12, 15, 16, 18-20, 22-25, 28, 29, 31 and 33-40 under 35 USC §103(a) as being obvious over Cable et al. (US 3,226,027) in view of Gulley (RE 28,121); (2) rejected claims 7-9, 21, 30, and 43-48 under 35 USC §103(a) as being obvious over Cable in view of Gulley; and (3) rejected claims 13, 26, 41, and 42 under 35 USC §103(a) as being obvious over Cable in view of Gulley and further in view of Adams (US 3,627,436). Applicants respectfully request reconsideration of the application in view of the foregoing amendments and the following remarks.

I. Rejections under 35 U.S.C. §103(a)

Claims 1-2 and 4-13

As amended, claim 1 recites:

1. An apparatus for supporting a manufacturing tool relative to a workpiece, the apparatus comprising:

a track assembly having a plurality of attachment devices configured to be attached to the workpiece and including at least one rail, the rail including an elongated, substantially smooth surface having a longitudinally-extending neutral axis and a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack comprises a plurality of tapered apertures* disposed within the substantially smooth surface, the plurality of tapered apertures being uniformly spaced along the longitudinally-extending neutral axis of the rack, *the plurality of attachment devices coupled to the at least one rail such that the plurality of attachment devices are distributed along the longitudinally-extending neutral axis and disposed directly between the at least one rail and the workpiece when the track assembly is engaged to the workpiece*; and

a carriage comprising an x-axis portion moveably coupled to the track assembly and moveable relative to the workpiece along the rail, the carriage including a drive gear having a plurality of drive teeth, the plurality of tapered apertures being configured and spaced to fittingly receive one or more of the plurality of drive teeth as the drive gear rollably engages the rack, the carriage further comprising a y-axis portion slideably coupled to the x-axis portion and

moveable with respect to the x-axis portion along a y-axis oriented transversely to the longitudinally-extending neutral axis, the y-axis being approximately co-planar with the substantially smooth surface of the rail of the track assembly. (emphasis added)

Cable (U.S. 3,226,027):

Cable discloses an apparatus having a rail 11 attached to a work piece 15 by magnets 13. The magnets 13 are positioned on respective ends of a cross strap 12. A plurality of "perforations" 22 are disposed within the rail 11 to engage with a drive cog 21 of a machine 14. (2:20-60).

Cable fails to disclose, teach, or fairly suggest the apparatus recited in claim 1. Specifically, Cable fails to teach or fairly suggest an apparatus that includes in relevant part "a track assembly having a plurality of attachment devices configured to be attached to the workpiece and including at least one rail, the rail including an elongated, substantially smooth surface having a longitudinally-extending neutral axis and a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack comprises a plurality of tapered apertures* disposed within the substantially smooth surface, the plurality of tapered apertures being uniformly spaced along the longitudinally-extending neutral axis of the rack, *the plurality of attachment devices coupled to the at least one rail such that the plurality of attachment devices are distributed along the longitudinally-extending neutral axis and disposed directly between the at least one rail and the workpiece when the track assembly is engaged to the workpiece.*" (emphasis added). According to Cable, the apparatus is designed to "hold a welding and/or cutting machine and the like against a selected work surface adapted to a magnetic holding." (1:21-23).

As best shown in Figure 9 of Cable, the magnets 13 taught by Cable are positioned at the ends of cross straps 12, and therefore are positioned laterally away from the rail 11. There is no teaching of suggestion in Cable of "*the plurality of attachment devices coupled to the at least one*

rail such that the plurality of attachment devices are distributed along the longitudinally-extending neutral axis and disposed directly between the at least one rail and the workpiece when the track assembly is engaged to the workpiece" as recited in Applicants' claim 1.

In addition, as admitted by the Examiner, there is no teaching or suggestion in Cable of the perforations 22 being tapered (conically or wedge-shaped). (See Final Office Action dated Aug. 21, 2007, p. 3, para. 3). The Examiner has opined that Applicants' teaching of tapered apertures disposed within the at least one rail is merely a design choice since "Applicant has not disclosed that the tapered, wedge or conically shaped apertures provides an advantage." (See Final Office Action dated Aug. 21, 2007, p. 3, para. 3).

Applicants respectfully traverse, and draw the Examiner's attention to the Detailed Description at page 6, first paragraph, which states in relevant part: "As further shown in FIGURE 6, the apertures 188 may be tapered to closely match the profile of the teeth 135 of the drive gear 132. ... Thus, the teeth 135 of the drive gear 132 may remain more positively engaged with the rack 180 as the carriage assembly 120 is driven over the track assembly 110, even when the rails 112 are twisted and flexed over contoured surfaces." (Application, p. 6, para. 1). From the foregoing, it is apparent that Applicants have indeed disclosed an advantage provided by the tapered apertures recited in claim 1. For this additional reason, claim 1 is allowable over Cable.

Gulley (RE 28,121)

Gulley teaches a self-guided tool system having a track unit 45 that is attached to a workpiece by magnets (or suction cups) 116 positioned laterally outwardly from the track unit 45 on the ends of a cross arm 115. (8:20-21; Figs. 1 and 25).

Gulley fails to remedy the above-noted deficiencies of Cable. Specifically, Gulley fails to disclose, teach, or fairly suggest an apparatus that includes in relevant part "a track assembly

having a plurality of attachment devices configured to be attached to the workpiece and including at least one rail, the rail including an elongated, substantially smooth surface having a longitudinally-extending neutral axis and a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack comprises a plurality of tapered apertures* disposed within the substantially smooth surface, the plurality of tapered apertures being uniformly spaced along the longitudinally-extending neutral axis of the rack, *the plurality of attachment devices coupled to the at least one rail such that the plurality of attachment devices are distributed along the longitudinally-extending neutral axis and disposed directly between the at least one rail and the workpiece when the track assembly is engaged to the workpiece.*" (emphasis added). According to Gulley, the magnets (or suction cups) 116 positioned laterally outwardly from the track unit 45 on the ends of a cross arm 115. (8:20-21; Figs. 1 and 25). Therefore, claim 1 is allowable over Gulley, either singly or in combination with Cable.

Adams (US 3,627,436)

Adams discloses an apparatus having a track 11 mounted to a work piece 12 by a transverse bowed mounting step 25. (3:40-44; Fig. 1). A bolt slot 27 at each end of the mounting step 25 engages a fastener 28 to secure the track 11 to the work piece 12. (3:45-46).

Adams fails to remedy the above-noted deficiencies of Cable and Gulley. Specifically, Adams fails to disclose, teach, or fairly suggest an apparatus that includes in relevant part "a track assembly having a plurality of attachment devices configured to be attached to the workpiece and including at least one rail, the rail including an elongated, substantially smooth surface having a longitudinally-extending neutral axis and a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack comprises a plurality of tapered apertures* disposed within the substantially smooth surface,

the plurality of tapered apertures being uniformly spaced along the longitudinally-extending neutral axis of the rack, *the plurality of attachment devices coupled to the at least one rail such that the plurality of attachment devices are distributed along the longitudinally-extending neutral axis and disposed directly between the at least one rail and the workpiece when the track assembly is engaged to the workpiece.*" (emphasis added). According to Adams, the rack 11 is mounted on a transverse mounting step 25 that is bolted to the work piece 12. (3:40-45; Figs. 1 and 25). Therefore, claim 1 is allowable over Adams, either singly or in combination with Cable and Gulley.

For the foregoing reasons, claim 1 is allowable over the Cited References (Cable, Gulley, and Adams), either singly or in any properly motivated combination. Claims 2 and 4-13 depend from claim 1 and are allowable over the cited references at least due to their dependencies on claim 1.

Claims 15-16, 18-26, and 28

As amended, claim 15 recites:

15. An assembly for performing a manufacturing operation on a workpiece, the assembly comprising:

a track assembly having a plurality of attachment devices configured to be attached to the workpiece and including a plurality of rails, the rails being spaced apart and oriented approximately parallel, each rail including an elongated, substantially smooth surface having a longitudinally-extending neutral axis, and at least one rail having a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack comprises a plurality of tapered apertures* disposed within the substantially smooth surface of the at least one rail, the plurality of tapered apertures being uniformly spaced along the longitudinally-extending neutral axis of the rack, *the plurality of attachment devices being coupled to the plurality of rails such that the plurality of attachment devices are distributed along the longitudinally-extending neutral axis and disposed directly between the plurality of rails and the workpiece when the track assembly is engaged to the workpiece*;

a carriage comprising an x-axis portion moveably coupled to the track assembly and moveable relative to the workpiece along the rails, the carriage including a drive gear having a plurality of drive teeth, the plurality of tapered apertures being configured and spaced to fittingly receive one or more of the plurality of drive teeth as the drive gear rollably engages the rack, the carriage further comprising a y-axis portion slideably coupled to the x-axis portion and moveable with respect to the x-axis portion along a y-axis oriented transversely to the longitudinally-extending neutral axis, the y-axis being approximately co-planar with the substantially smooth surface of the at least one rail of the track assembly, the carriage including a tool support adapted to receive and support a manufacturing tool; and

a manufacturing tool coupled to the tool support and configured to be engageable with the workpiece to perform the manufacturing operation on the workpiece. (emphasis added).

For the reasons set forth above, the Cited References (Cable, Gulley, and Adams) fail disclose, teach, or fairly suggest an apparatus as recited in claim 15 that includes in relevant part "a track assembly having a plurality of attachment devices configured to be attached to the workpiece and including a plurality of rails, the rails being spaced apart and oriented approximately parallel, each rail including an elongated, substantially smooth surface having a longitudinally-extending neutral axis, and at least one rail having a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack comprises a plurality of tapered apertures* disposed within the substantially smooth surface of the at least one rail, the plurality of tapered apertures being uniformly spaced along the longitudinally-extending neutral axis of the rack, *the plurality of attachment devices being coupled to the plurality of rails such that the plurality of attachment devices are distributed along the longitudinally-extending neutral axis and disposed directly between the plurality of rails and the workpiece when the track assembly is engaged to the workpiece.*" (emphasis added). The Cited References do not teach a rack comprising *a plurality of tapered aperatures*, nor do the Cited References teach or suggest a plurality of attachment devices coupled to the

plurality of rails and *distributed along the longitudinally-extending neutral axis and disposed directly between the plurality of rails and the workpiece when the track assembly is engaged to the workpiece.*

For the foregoing reasons, claim 15 is allowable over the Cited References (Cable, Gulley, and Adams), either singly or in any properly motivated combination. Claims 16, 18-26, and 28 depend from claim 15 and are allowable over the Cited References at least due to their dependencies on claim 15.

Claims 29-31 and 33-42

As amended, claim 29 recites:

29. A method of performing a manufacturing operation on a workpiece, the method comprising:

attaching a track assembly to the workpiece with a plurality of attachment devices, the track assembly including at least one rail including an elongated, substantially smooth surface having a longitudinally-extending neutral axis and a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack comprises a plurality of tapered apertures* disposed within the substantially smooth surface, the plurality of tapered apertures being uniformly spaced along the longitudinally-extending neutral axis of the rack, *the plurality of attachment devices being coupled to the at least one rail such that the plurality of attachment devices are distributed along the longitudinally-extending neutral axis and disposed directly between the at least one rail and the workpiece when the track assembly is engaged to the workpiece*;

moveably coupling a carriage to the track assembly, the carriage comprising an x-axis portion moveable relative to the workpiece along the rails, the x-axis portion including a drive gear having a plurality of drive teeth, the plurality of tapered apertures being configured and spaced to fittingly receive one or more of the plurality of drive teeth as the drive gear rollably engages the rack;

slideably coupling a y-axis portion to the x-axis portion of the carriage, wherein the y-axis portion is moveable with respect to the x-axis portion along a y-axis oriented transversely to the longitudinally-extending neutral axis, the y-axis being approximately co-planar with the substantially smooth surface of the rail of the track assembly;

moveably supporting a manufacturing tool on the carriage;

engaging a drive apparatus with the drive gear; and

driving the carriage supporting the manufacturing tool along the track assembly using the drive apparatus. (emphasis added).

For the reasons set forth above, the Cited References (Cable, Gulley, and Adams) fail disclose, teach, or fairly suggest a method as recited in claim 29 that includes in relevant part "attaching a track assembly to the workpiece with a plurality of attachment devices, the track assembly including at least one rail including an elongated, substantially smooth surface having a longitudinally-extending neutral axis and a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack comprises a plurality of tapered apertures* disposed within the substantially smooth surface, the plurality of tapered apertures being uniformly spaced along the longitudinally-extending neutral axis of the rack, *the plurality of attachment devices being coupled to the at least one rail such that the plurality of attachment devices are distributed along the longitudinally-extending neutral axis and disposed directly between the at least one rail and the workpiece when the track assembly is engaged to the workpiece.*" (emphasis added). The Cited References do not teach a rack comprising *a plurality of tapered aperatures*, nor do the Cited References teach or suggest a plurality of attachment devices coupled to the plurality of rails and *distributed along the longitudinally-extending neutral axis and disposed directly between the plurality of rails and the workpiece when the track assembly is engaged to the workpiece.*

For the foregoing reasons, claim 29 is allowable over the Cited References (Cable, Gulley, and Adams), either singly or in any properly motivated combination. Claims 30-31 and 33-42 depend from claim 29 and are allowable over the Cited References at least due to their dependencies on claim 29.

Claims 43-45

As amended, claim 43 recites:

43. An assembly for performing a manufacturing operation on a workpiece, the assembly comprising:

a track assembly having plurality of attachment devices attachable to the workpiece and including a plurality of rails, the plurality of rails being spaced apart and oriented approximately parallel, each rail including an elongated, substantially smooth surface having a longitudinally-extending neutral axis and a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, wherein the rack includes a plurality of apertures disposed within the substantially smooth surface, the plurality of apertures being uniformly spaced along the longitudinally-extending neutral axis of the rack, *the plurality of attachment devices coupled to the plurality of rails such that the plurality of attachment devices are distributed along the longitudinally-extending neutral axis and disposed directly between the plurality of rails and the workpiece when the track assembly is engaged to the workpiece*; and

a carriage comprising an x-axis portion moveably coupled to the track assembly and moveable relative to the workpiece along the rails, the carriage including a drive gear having a plurality of drive teeth, the plurality of tapered apertures being configured and spaced to fittingly receive one or more of the plurality of drive teeth as the drive gear rollably engages the rack, the carriage further comprising a y-axis portion slideably coupled to the x-axis portion and moveable with respect to the x-axis portion along a y-axis oriented transversely to the longitudinally-extending neutral axis, the y-axis being approximately co-planar with the substantially smooth surface of the rail of the longitudinally-extending neutral axis, the y-axis being approximately co-planar with the substantially smooth surface of the rail of the track assembly;

the carriage including a manufacturing tool that performs the manufacturing operation on the workpiece, and a drive assembly having at least one rotatable drive gear that includes a plurality of outwardly-projecting teeth configured to fittingly engage the plurality of apertures as the drive gear is rotated, the drive gear moving the carriage along the track assembly as the drive gear is rotated.

For the reasons set forth above, the Cited References (Cable, Gulley, and Adams) fail disclose, teach, or fairly suggest an assembly as recited in claim 43 that includes in relevant part "a track assembly having plurality of attachment devices attachable to the workpiece and including a plurality of rails, the plurality of rails being spaced apart and oriented approximately parallel, each rail including an elongated, substantially smooth surface having a longitudinally-extending neutral axis and a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, wherein the rack includes a plurality of apertures disposed within the substantially smooth surface, the plurality of apertures being

uniformly spaced along the longitudinally-extending neutral axis of the rack, *the plurality of attachment devices coupled to the plurality of rails such that the plurality of attachment devices are distributed along the longitudinally-extending neutral axis and disposed directly between the plurality of rails and the workpiece when the track assembly is engaged to the workpiece.*" (emphasis added). The Cited References do not teach or suggest a plurality of attachment devices coupled to the plurality of rails *such that the plurality of attachment devices are distributed along the longitudinally-extending neutral axis and disposed directly between the plurality of rails and the workpiece when the track assembly is engaged to the workpiece.*

For the foregoing reasons, claim 43 is allowable over the Cited References (Cable, Gulley, and Adams), either singly or in any properly motivated combination. Claims 44-45 depend from claim 43 and are allowable over the Cited References at least due to their dependencies on claim 43.

Claims 46-48

Similarly, claim 46 recites:

> 46. A method of performing a manufacturing operation on a workpiece, the method comprising:
>
> attaching a track assembly to the workpiece using a plurality of attachment devices, the track assembly including a plurality of rails, the plurality of rails being spaced apart and oriented approximately parallel, each rail including an elongated, substantially smooth surface having a longitudinally-extending neutral axis and at least one rail having a rack extending along a pitch line that at least approximately coincides with its longitudinally-extending neutral axis, wherein the rack includes a plurality of apertures disposed within the substantially smooth surface, the plurality of apertures being uniformly spaced along the longitudinally-extending neutral axis of the rack, *the plurality of attachment devices being coupled to the plurality of rails such that the plurality of attachment devices are distributed along the longitudinally-extending neutral axis and disposed directly between the plurality of rails and the workpiece when the track assembly is engaged to the workpiece*;
>
> moveably coupling a carriage to the track assembly, the carriage comprising an x-axis portion moveable relative to the workpiece along the rails, the x-axis portion including a

drive gear having a plurality of drive teeth, the plurality of tapered apertures being configured and spaced to fittingly receive one or more of the plurality of drive teeth as the drive gear rollably engages the rack;

slideably coupling a y-axis portion to the x-axis portion of the carriage, wherein the y-axis portion is moveable with respect to the x-axis portion along a y-axis oriented transversely to the longitudinally-extending neutral axis, the y-axis being approximately co-planar with the substantially smooth surface of the rail of the track assembly;

moveably supporting a manufacturing tool on the carriage;

engaging a drive assembly with the rack, the drive assembly having at least one rotatable drive gear that includes a plurality of outwardly-projecting teeth configured to fittingly engage the plurality of apertures as the drive gear is rotated; and

driving the carriage along the track assembly including rotating the drive gear. (emphasis added).

For the reasons set forth above, the Cited References (Cable, Gulley, and Adams) fail disclose, teach, or fairly suggest a method as recited in claim 46 that includes in relevant part "attaching a track assembly to the workpiece using a plurality of attachment devices, the track assembly including a plurality of rails, the plurality of rails being spaced apart and oriented approximately parallel, each rail including an elongated, substantially smooth surface having a longitudinally-extending neutral axis and at least one rail having a rack extending along a pitch line that at least approximately coincides with its longitudinally-extending neutral axis, wherein the rack includes a plurality of apertures disposed within the substantially smooth surface, the plurality of apertures being uniformly spaced along the longitudinally-extending neutral axis of the rack, *the plurality of attachment devices being coupled to the plurality of rails such that the plurality of attachment devices are distributed along the longitudinally-extending neutral axis and disposed directly between the plurality of rails and the workpiece when the track assembly is engaged to the workpiece.*" (emphasis added). The Cited References do not teach or suggest a plurality of attachment devices coupled to the plurality of rails *such that the plurality of attachment devices are distributed along the longitudinally-extending neutral axis and disposed directly between the plurality of rails and the workpiece when the track assembly is engaged to the workpiece.*

For the foregoing reasons, claim 46 is allowable over the Cited References (Cable, Gulley, and Adams), either singly or in any properly motivated combination. Claims 47-48 depend from claim 46 and are allowable over the Cited References at least due to their dependencies on claim 46.

CONCLUSION

Applicants respectfully submit pending claims 1, 2, 4-13, 15, 16, 18-26, 28-31 and 33-48 are now in condition for allowance. If there are any remaining matters that may be handled by telephone conference, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

Respectfully Submitted,

Dated: Feb. 20, 2008 By: _____

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Enclosures: Request for Continued Examination